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RESULTS OF SARATOGA SPITTLEBUG NYMPHAL SURVEY ON THE HIAWATHA NATIONAL FOREST

R. F. Fowler

INTRODUCTION: The fall 1968 scar-count survey on the Rapid River Ranger District revealed a high incidence of Saratoga spittlebug (Aphrophora saratogensis (Fitch)) feeding in three red pine (Pinus resinosa Ait.) plantations totaling 205 acres.1/ A suppression was proposed. Spring nymphal surveys are used to confirm the presence of the spittlebug population and as a basis for forecasting the damage likely to occur from adult feeding activity.

METHODS: The survey consisted of 15 to 30 1/10 milacre plots, depending on the size of the plantations, located systematically throughout the plantation. The number of nymphs and the average red pine stocking, height, and number of live whorls were recorded for the plantation. The surveys were conducted by Rapid River Ranger District personnel.

Damage prediction is based on the relationship between the number of adult spittlebugs present and the amount of feeding surface available to the adult spittlebug. These relationships were taken from Ewan's tables and are expressed in terms of tree units which are determined as follows:2/

T.U. = No. trees/a x Ave. tree ht. x No. live whorls/tree

A graph was prepared by modifying the tabular data. The number of nymphs on each plot was compared with the T.U. on the plot and the population expressed as high, moderate, light or none.

RESULTS: The results are presented in Table 1. Severe feeding damage is expected in Plantation 17a, b, and 20a. Almost 1/3 of the plots have a high spittlebug population and an additional equal percentage with a moderate population. Flagging of the red pine is in evidence in parts of this plantation and additional heavy feeding will cause additional flagging, probable tree stunting and malformation and possible mortality.

TABLE 1

Plant. No.	Location T_N	Rw	S	Acres	Trees/ Acre	Ht.	Live Whorls	Nymphal Populations High	Mod.	Light	None
						ft.		%	%	%	%
17a, b & 20a	40/41	22	5/34	90	880	5	6	27	27	10	36
P128a	41	21	1&2	40	1000	3	7	0	7	0	93
P128a	41	21	11	75	700	3	6	0	0	0	100

1/ Millers, I. 1968. Biological evaluation of Saratoga spittlebug as based on 1968 scar-count surveys on the National Forests in the Lake States. USDA Forest Service, Northeast Area, State and Private Forestry, Division of Pest Control. Rpt. S-68-13.

2/ Ewan, H. G. 1961. The Saratoga spittlebug. USDA Forest Service, Tech. Bull. 1250.